

What is claimed is:

1. A directional setting apparatus, comprising:

a voice recognition unit which detects a certain voice included in a sound signal outputted from a microphone array having a plurality of microphones and a directional determination period indicating a detection period of said certain voice;

a voice direction detector which detects occurrence direction of said certain voice in said directional determination period; and

a directional controller which controls directivity of a prescribed apparatus based on the sound signals inputted from said plurality of microphones in said directional determination period.

2. The directional setting apparatus according to claim 1, wherein said directional controller controls the directivity of said prescribed apparatus, based on the sound signal which is generated by delaying the sound signals outputted from said plurality of microphones in said directional determination period with locations of said microphones and the amount of delay based on the direction of arrival of the sound signals and adding the sound signals to each other.

3. The directional setting apparatus according to claim 1, further comprising:

a detection result storage which stores directional data indicating occurrence direction of said certain voice detected by said voice direction detector,

wherein said directional controller controls directivity of said certain apparatus based on the directional data of said certain voice in said directional determination period, among the directional data stored in said detection result storage.

4. The directional setting apparatus according to claim 1, further comprising a sound storage which stores said sound signal,

wherein said directional controller controls directivity of said prescribed apparatus based on said sound signals in said directional determination period, among the sound signal stored in said detection result storage.

5. The directional setting apparatus according to claim 1, wherein said prescribed apparatus is said microphone array; and

said directional controller controls the directivity of said microphone array based on the detection result of said voice direction detector.

6. The directional setting apparatus according to claim 1, wherein said prescribed apparatus is a image pick-up device; and

said directional controller controls image pick-up direction of said image pick-up device based on the detection result of said voice direction detector.

7. The directional setting apparatus according to claim 1, wherein said voice recognition unit detects said certain voice included in the sound signal outputted from a prescribed microphone among said plurality of microphones.

8. The directional setting apparatus according to claim 1, wherein said voice recognition unit detects said certain voice included in the output of said directional controller.

9. The directional setting apparatus according to claim 1, wherein said voice direction detector detects

occurrence direction of said certain direction based on a result of repeating the detection of occurrence direction of said certain voice by a plurality of times.

10. The directional setting apparatus according to claim 1, wherein said directional determination period is a partial period in detection period of said certain voice.

11. The directional setting apparatus according to claim 1, wherein said directional determination period is a period within a detection period of said certain voice and in which voice level of said certain voice is not less than a prescribed level.

12. The directional setting apparatus according to claim 1, wherein said directional controller can individually control the directivities of said plurality of microphone, respectively.

13. The directional setting apparatus according to claim 1, wherein said directional controller supplies a sound signal obtained by combining the sound signals outputted from said plurality of microphones to said voice recognition unit without control of the directivity, when said voice recognition unit detects said certain voice at first time, and controls the directivity of the sound signals outputted from said plurality of microphones based on the prior detection result by said voice recognition unit to supply the sound signal to said voice recognition unit, when said voice recognition unit detects said certain voice at second or more times.

14. The directional setting apparatus according to claim 1, wherein said voice recognition unit detects

multiple types of said certain voices and a plurality of said directional determination periods corresponding to these certain voices; and

said directional controller independently controls the directivity of said prescribed apparatus based on the sound signal outputted from said plurality of microphones in said plurality of directional determination period.

15. The directional setting apparatus according to claim 1, wherein said voice recognition unit detects a voice indicating a setting of a certain directivity and a voice indicating a setting release of said certain directivity; and

said directivity controller suspends the directional control of said prescribed apparatus when said voice recognition unit detects the voice which indicates setting release of said certain directivity.

16. The directional setting apparatus according to claim 15, wherein said directional controller releases setting of said certain directivity, and controls directivity of said prescribed apparatus based on the detection result of a new certain voice when said voice direction detector detects occurrence direction of the new certain voice, before said voice direction detector detects the voice indicating the setting release of said certain directivity.

17. The directional setting apparatus according to claim 1, wherein said certain voice is a voice including a meaningful certain keyword.

18. A directional setting system, comprising:

a microphone array having a plurality of microphones;

a voice recognition unit which detects a certain voice included in a sound signal outputted from said microphone array and a directional determination period indicating a detection period of said certain voice;

a voice direction detector which detects occurrence direction of said certain voice in said directional determination period; and

a directivity controller which controls directivity of a prescribed apparatus based on sound signals outputted from said plurality of microphones in said directional determination period.

19. A directional setting method, comprising:

detecting a certain voice included in a sound signal outputted from a microphone array having a plurality of microphones, and a directional determination period indicating a detection period of said certain voice;

detecting occurrence direction of said certain voice in said directional determination period; and

controlling directivity of a prescribed apparatus based on the sound signals outputted from said plurality of microphones in said directional determination period.

20. A directional setting program, the steps of comprising:

detecting a certain voice included in a sound signal outputted from a microphone array having a plurality of microphones, and a directional determination period indicating a detection period of said certain voice;

detecting occurrence direction of said certain voice in said directional determination period; and

controlling directivity of a prescribed apparatus based on the sound signals outputted from said plurality of microphones in said directional determination period.